

Taking the “SAFETY PULSE” Of Your Squadron

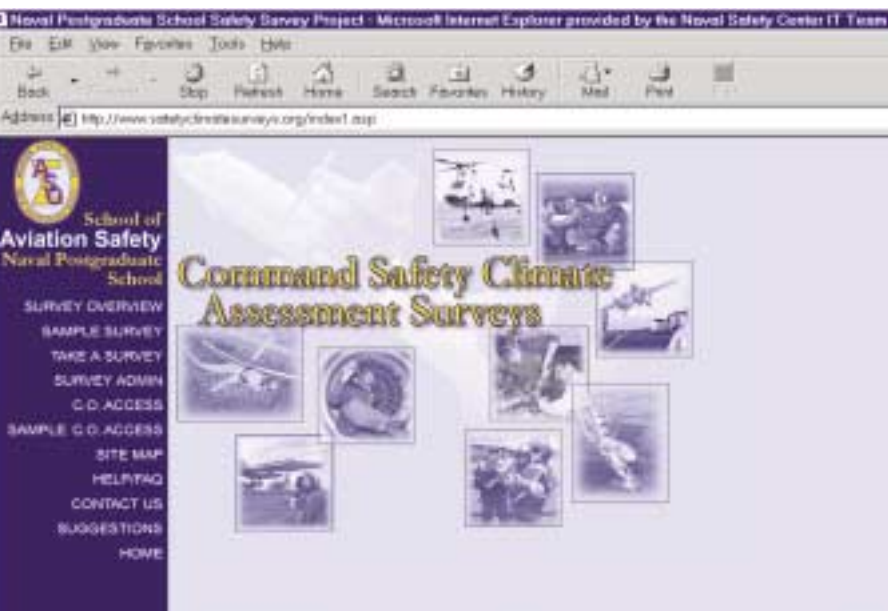
*By Dr. Robert Figlock
and Dr. Anthony Ciavarelli*

The CO has been in place for a couple of months and is getting a grip on the squadron's op tempo, work ethic, and safety climate. But, are the CO's impressions correct? Is the CO's finger on the pulse of the squadron? How can COs know when their perceptions are accurate? How do they gauge

success of current, well-established programs within their units? Gut feeling? Intuition? While these may play a role, most COs rely on more traditional approaches, such as staff feedback, performance measures, personal observations, and now, Command Safety Climate Assessment (CSCA) Surveys. The CSCA process is a new, web-based tool for COs to survey the perceptions of their aircrews and maintainers and access feedback. To date, over 24,000 surveys have been submitted by more than 270 aviation units.

These surveys are one of the newest tools in the continued efforts to reduce the naval aviation Class A flight mishap rate. It has declined markedly over the past fifty years, but the proportion of mishaps due to human error has remained at a stable 80 percent. Over this period, many intervention efforts addressed crew-station design, operational training, and aircrew selection. Unfortunately, little attention was paid to organizational factors that affect safety performance.

That changed following the F-14 crash near Nashville in 1996. Senior naval-aviation leaders chartered a human factors quality management board (QMB) to analyze processes, programs,



Via this home page, more than 24,000 personnel from 270 squadrons have participated in the surveys.

and systems. The QMB focused on analyzing mishap data, benchmarking best practices, and assessing safety climate.

QMB support led the Naval Postgraduate School (NPS) to study squadron organizational safety. UC Berkley had already researched high-reliability organizations, identifying attributes that reduce risk in hazardous operations. Since such attributes are difficult to observe and measure, the NPS developed a model that was tailored to aviation squadrons. The model included: process auditing, reward systems, quality control, risk management, command and control, and communication and functional relationships. This model became the basis for the CSCA surveys.

CSCA Surveys

The CSCA on-line surveys are the Command Safety Assessment (CSA) aimed at aircrews, and the Maintenance Climate Assessment Survey (MCAS) aimed at maintainers. These surveys are available via the NPS School of Aviation Safety website. The surveys assess an organization's ability to conduct flights and maintenance in terms of leadership, culture, standards, policies, procedures, and practices. Each survey takes approximately 15 minutes to complete.

Privacy of Data

Participants remain anonymous. This permits their unbiased inputs to reach the CO without fear of retribution. Squadron survey results are available only to COs, on the web via password. Unit results are combined with those from other organizations to form a database. It allows COs to compare their unit by such categories as aircraft type and community. Access to individual command results is restricted to unit COs. Only compiled survey results for aircraft type or community are available to group, wing, and type commanders. COs can use the responses to adjust their perceptions and to be proactive in their squadrons. Similarly, upper-echelon commanders can make adjustments to provide broader support on community-wide issues.

Sample CSA Survey Results

A sample CSA question is, "The Aviation Safety Officer position is a sought after billet

SAMPLE SURVEY
(CSA Survey sample)

PART I: DEMOGRAPHIC INFORMATION
The following survey is a SAMPLE. No actual responses will be recorded. For the actual survey, no individual's demographic data will be made available to any CO.

1. Your name:

2. Your designation:

3. Your current command:

4. Your tour of duty:

5. Are you currently a deployed crew?

6. Your status:

7. Your service:

8. Your parent command:

9. Your unit's location:

PART II: THE SURVEY
The following survey is a SAMPLE. No actual responses will be recorded.

1. My command meets minimum standards and complies with safety standards and operating procedures.

2. My command uses an internal audit and hazard reporting system to catch any problems that may lead to a mishap.

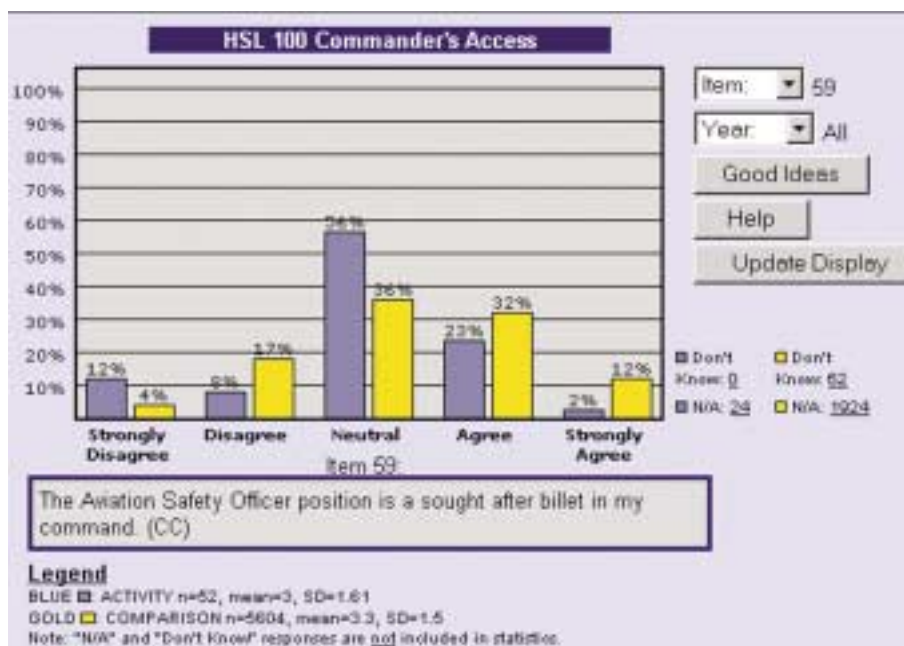
3. My command has a defined process to set training goals and to ensure performance.

4. My command closely monitors performance and enforces standards to ensure actions are qualified to fly.

Response options: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree, Don't Know.

Pull-down menus allow you to complete the survey in 15 minutes.

in my command." The image below shows how it would be viewed using the CO-access option. This view compares the unit's data (the blue bars, 60 responses) to the entire CSA database (gold bars, 4,904 responses). After comparing the two response distributions, they appear to be a "reverse image" of each other. Results like this will raise questions in a CO's mind as to why the squadron



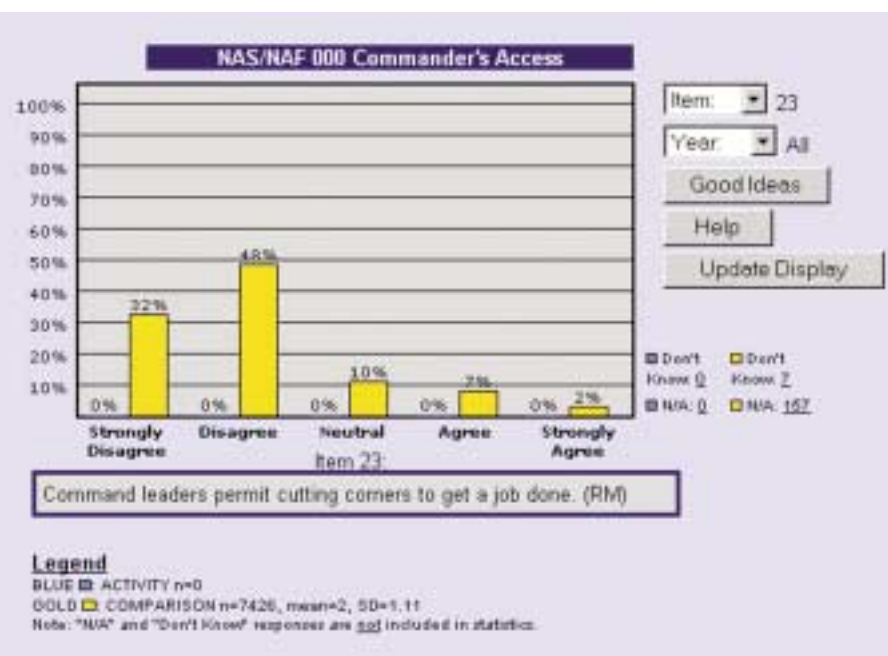
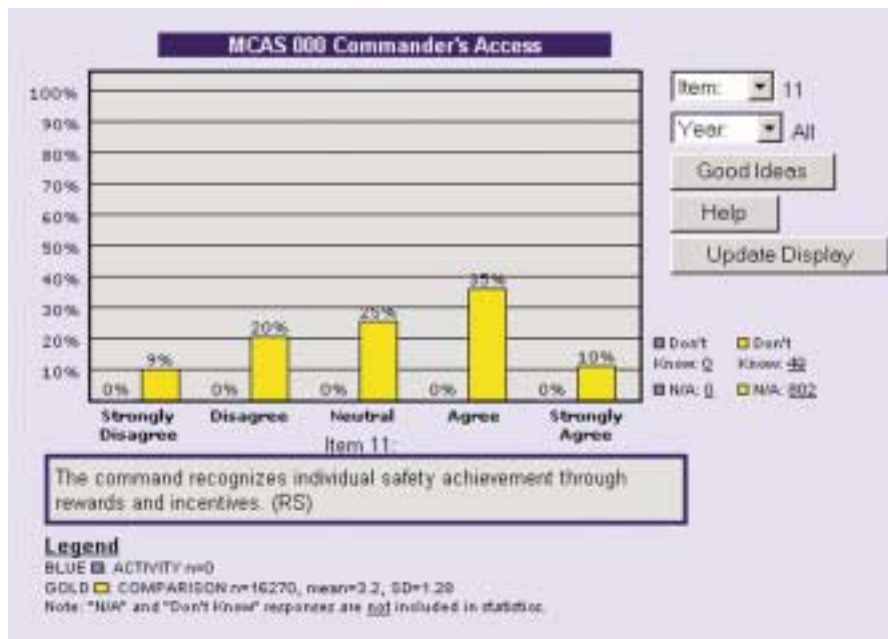
Here's how you can display squadron-survey data for a specific question.

data differs from the aggregate database. Reviewing other survey items relating to the squadron's safety department may provide further insight.

Higher-Headquarter Access to Survey Data

Higher-headquarter (HHQ) COs also can access the aggregate database for comparing aircraft types and communities. The image below shows sample CSA data for item No. 23, "Command leaders permit cutting corners to get a job done," as it would be viewed using the CO-access option. Note this item is negatively worded, so disagreement is desirable. The view is for all aircraft categories, which includes the entire database. Should naval-aviation COs be satisfied that nearly a fifth of the aircrew finds command leaders permit corner-cutting? Results like these raise a question in a group or wing CO's mind, "How are my squadron COs communicating their safety message?"

Sample MCAS data is



You can also display information from a larger database. This one show corner-cutting views within aircraft types and communities.

shown below for item No. 11, "The command recognizes individual safety achievement through rewards or incentives," as it would be viewed using the CO-access option. This is for all aircraft categories. It shows that fewer than half of the responding maintainers found the reward system to be in place to recognize safety achievement. This is an area where a CO has complete control. Results like these may have

The MCAS data can show if the rewards and incentives program is effective.

a wing or group COs ask, "Should my COs provide greater recognition for safety efforts?" The CSCA surveys help identify problem areas. Although they don't provide the "why," they clearly provide a starting point.

Preliminary CSA Results

Here are some overall highlights from over 6,800 naval aviators, naval flight officers, and naval aircrew inputs in the aggregate aircrew database:


- 95 percent of CSA survey participants agreed that rules were important: "Leaders in my command encourage everyone to be safety-conscious and to follow the rules."
- Only 80 percent of CSA survey participants agreed that crew-rest standards were enforced in their command.

- 35 percent of CSA survey participants felt that, based upon their command's personnel and other assets, their command is over-committed.
- Only 73 percent of CSA survey participants agreed that good communication flow exists up and down the chain of command.
- Surprisingly, 27 percent of CSA survey participants responded N/A to this statement: "Human Factors Councils have been successful in identifying aircrew members who pose a risk to safety."

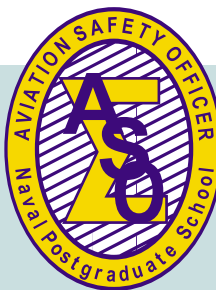
Coming Soon!

The NPS School of Aviation Safety is putting the finishing touches on the next-generation CSCA system. You will be able to automatically update the database for different demographics or changes to the questionnaire. Statistical profile analyses will be based on select "safety critical" questions or a commander's preferred questions. It will have more comprehensive statistical and graphic analysis routines for results and trends. Also, a new version of the MCAS comes on-line in early 2002. It was designed for the Naval Aviation Depot, Cherry Point, and focuses on depot-level maintainer issues.

Requesting CSCA Surveys

COs wanting their units to take the CSA and MCAS survey, or both, should have their safety officer contact Professor Bob Figlock at rfiglock@nps.navy.mil, (831) 656-2581 (DSN 878). The safety officer supervises the unit-survey process and must identify how many aircrew and maintainers will be taking the surveys. Once a set number of surveys are submitted (60 percent recommended), the CO gets a password to access the unit's results on-line and compare them by category. HHQ COs also should contact Professor Figlock to gain access to the aggregate database. Additional information on the CSCA surveys can be obtained at www.safetyclimatesurveys.org or www.nps.navy.mil/~avsafety/. 

Professors Figlock (USMC, Ret.) and Ciavarelli have been instructors for the past 10 years in the School of Aviation Safety at the Naval Postgraduate School, Monterey, Calif.



About the School of Aviation Safety

The Navy established the school in 1965 at NPS in Monterey, Calif. Its charter is to, "Preserve human and material assets and enhance combat readiness by educating aviation officers to identify hazards, to manage risks, and to investigate and report hazards and aviation mishaps." The school offers two highly focused courses. First, a six-day survey Aviation Safety Command (ASC) course for aviation-squadron COs, XO's, officers screened for command, OinCs, and major-command aviation-safety staff officers. Second, a six-week, in-depth Aviation Safety Officer (ASO) course. The ASC course qualifies graduates for senior membership on an aircraft-mishap board, whereas the latter educates specialized ASOs to assist COs in conducting mishap-prevention programs. ASO-course graduates are taught to investigate aviation mishaps, organize and administer squadron mishap-prevention programs, identify hazards, and manage safety information. It is also noteworthy to point out that both Navy and Marine Corps ASO and ASC graduates are designated as ORM instructors. Over the past decade, the School of Aviation Safety has averaged nearly 650 ASC and ASO graduates per year.